



Office Locations:
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THE MANUFACTURING EXTENSION PARTNERSHIP IN OHIO

Manufacturing Extension Partnership (MEP) is a nationwide system of services and support for smaller manufacturers to become more globally competitive. At the heart of the system is a network of affiliated, locally-based manufacturing extension centers. Each center, like TechSolve, is a partnership, typically involving federal, state, and local governments; industry; educational institutions; and other sources of expertise, information and funding support.

COMPANY CLIPS

Ransohoff Reduces Lead Time 52 Percent With Lean Front Office

Founded in 1916 and based in Cincinnati, Ransohoff manufactures aqueous cleaning machinery and is a leading supplier of high production, automated cleaning, environmental, and deburring systems. Ransohoff has less than 250 employees. Since 1998, Ransohoff has implemented lean manufacturing tools throughout its facility. These principles, however, had not been applied to areas typically thought of as the “front office,” or the non-manufacturing areas of the plant. This led to communication, alignment, and team problems. Ransohoff turned to TechSolve for help implementing lean principles into its front office,

TechSolve performed value stream mapping (VSM) on Ransohoff’s front office process, or the time from when a client requests a quote to the manufacturing release. When TechSolve began the project, this process took four days and involved cross-functional teams of executives, middle management, and shop floor associates. TechSolve’s VSM followed an order through the process and discovered that 70 percent of lead-time came from the front office, not from the manufacturing process. Over-production in the sales area, delays for information, underutilization of people, corrections and changes to quotes, information transfers from the client to the engineering department, job backlog, and extra processing of order information all contributed to this extensive downtime.

Following the VSM, TechSolve worked with Ransohoff to develop a prioritized action plan, which addressed immediate, intermediate, and long-term projects and parking lot issues. Through reorganization, Ransohoff now has a team-based structure, focused on individual product lines. Each of its product lines includes proposal, electrical engineering, mechanical engineering, purchasing, project management, manufacturing, and service representatives. Supporting these product teams is a collective team of marketing, finance, human resources, quality, and process improvement staff. Realignment of Ransohoff’s front office is expected to reduce lead-time by 52 percent within the first six months. This figure will

Continued

STATE STATS

DATA* COVERS JANUARY TO DECEMBER 2001

Number of projects completed
with firms
2862

Number of firms served
514

Number of firms served for
the first time
116

Federal cost share for current
operating year
\$1,472,400

State/other cost share for current
operating year
\$2,340,000

**Data as reported from center*

DATA** COVERS JANUARY TO DECEMBER 2001

Increased sales & retained sales
\$47,220,000

Client capital investment
\$2,822,001

Total cost savings
\$23,853,000

Jobs (created & retained)
229

***Source: Independent client impact survey*



continue to decrease as other lean tools are implemented, including creation of a “living” project electronic file, coordination of various databases, implementation of regular customer surveys, and other planned process improvements.

Yale Industries Gets A New View Of Lean Manufacturing

Yale Ducker founded Yale Industries, based in Dayton, in 1952. The company made its name producing awnings and patio covers and enclosures. Yale had a loyal customer base and steady sales. When Yale President Howard Ducker took over after his father died in 1998, the company began to take a new direction. Yale Industries’ nearly 50 employees now manufacture vinyl windows.

Yale Industries started planning for a new window geared more toward the replacement market. The company found what it was looking for in long-time supplier Dayton Technologies, a vinyl extruder based in Monroe, Ohio. Dayton Technologies was also a supplier to a new venture called American Window Alliance Inc. The alliance comprised a group of fabricators that had broken away from CertainTeed Corp., one of the country’s largest makers of building products, and struck out on their own. Dayton Technologies proceeded to introduce Yale Industries to American Window Alliance as a potential new member. Yale signed on in October 2001, and is ramping up production of a line of windows branded as American Window Alliance products. Yale’s window production volume will increase to 30,000 units in 2002, compared with 4,000 in 2001. The company’s annual sales are expected to increase by 75 percent, and new jobs are likely to be added to its current work force. Yale Industries contacted TechSolve to help it prepare for the expected increase in business and sales.

TechSolve assessed the Yale Industries operation and found a raft of inefficiencies. The TechSolve team found piles of inventory between workstations and between machines. They didn’t see how product could flow through the shop. They also discovered that only 1.8 percent of lead-time was value-added work, meaning much of the time it took to make the windows was wasteful. TechSolve worked with the Yale Industries team to put together a current state value stream map of the window manufacturing process and developed a future state value stream map, envisioning how the process would ideally flow. To bridge the gap between the current and future state, many changes had to be made at Yale Industries. However, TechSolve first trained all Yale Industries employees on the window line in the principles of lean manufacturing. They participated in a full-day lean simulation that gave them hands-on experience in and understanding of lean manufacturing.

Next, TechSolve advised that the window manufacturing process be moved to a different building to accommodate its processes. Yale Industries purchased new manufacturing equipment with shorter set-up times and better reliability. TechSolve developed a new layout of the equipment on the shop floor to encourage flow and reduce excess motion and movement of product. The organization also organized work-balancing stations to create process cycle times slightly below the “takt time” or rate at which customers were demanding product. TechSolve helped Yale Industries implement the lean principles of standard work, 5S (organization and cleaning of the work space), and visual management. Yale Industries switched from a “push” to a “pull” system, using kanbans between stations to trigger operations to produce and control work-in-process inventory between stations.

Yale Industries is now producing windows at a rate of 105 per day, up from 30 per day, with a value-added lead-time of 24 percent. This improvement comes from increasing its percent of value-added lead-time activities from 1.8 to 24 percent, and decreasing window production time from 64 hours and 27 minutes to one hour and 10 minutes. More importantly, Yale has also made strides in the philosophical component of lean manufacturing, instilling employees with the initiative to seek out and eliminate waste.